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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/874,587	06/04/2001	Lowell Winger	CISCP249/4147	5663
22434	7590	03/02/2006	EXAMINER	
BEYER WEAVER & THOMAS LLP P.O. BOX 70250 OAKLAND, CA 94612-0250			LEE, RICHARD J	
			ART UNIT	PAPER NUMBER
			2613	

DATE MAILED: 03/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/874,587

Applicant(s)

WINGER, LOWELL

Examiner

Richard Lee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 December 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 and 18-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 and 18-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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1. The applicant is informed again that office actions should not be provided in an IDS for consideration since an office action is not a publication. The IDS filed December 20, 2005 citing an Office Action dated August 22, 2005 (Application No. 09/894,113) therefore has not been considered by the Examiner and a line has been drawn through the citation as shown in the attachment. If the applicant wishes in the future to make the Examiner aware of any non-published articles, such as an Office Action, then it is suggested for the applicant to provide such information to the Office as an attachment or make reference in the remarks section of a response to the Office Action.

2. Claims 2, 3, 7, 8, 18, 19, and 21 are objected to because of the following informalities:
At claim 2, line 2, after “shot”, “,” should be deleted for clarity. Appropriate correction is required.

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1-13, and 18-21 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The Specification does not provide support for the particular features of “examining the coefficients of a DCT block to determine **an End of Block (EOB) length**” as claimed in claim 1, lines 3-4; “selecting an iDCT algorithm from a plurality of iDCT algorithms according to **the**

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EOB length” as claimed in claim 1, lines 5-6; “generating a histogram of EOB lengths for a number of B frames corresponding to a shot” as claimed in claim 2, line 2; “determination means for determining **an End of Block (EOB) length** in a DCT block” as claimed in claim 4, lines 3-4; “selection means for selecting an iDCT algorithm from a plurality of iDCT algorithms based upon the **said EOB length** and using **an EOB length histogram for a number of B-frames**” as claimed in claim 4, lines 5-7; “wherein said iDCT algorithm is selected by creating **an EOB length histogram of the first B-frame of a shot**” as claimed in claim 5, lines 8-9; “examining the coefficients of a DCT block to determine **an End of Block (EOB) length** based upon the position of the End of Block (EOB) coefficient” as claimed in claim 6, lines 4-5; “selecting an iDCT algorithm according to **the EOB length** and using **an EOB length histogram for B-frames**” as claimed in claim 6, lines 6-7; “wherein said iDCT_high algorithm is based upon **an EOB length of 39 or 40**” as claimed in claim 7, lines 1-2; “wherein said *iDCT_low algorithm is based upon an EOB length of 14 or 25*” as claimed in claim 8, lines 1-2; “wherein said *iDCT_high* algorithm is based upon **an EOB length of 39 or 40**” as claimed in claim 9, lines 1-2; “wherein said *iDCT_low* algorithm is based upon **an EOB length of 14 or 25**” as claimed in claim 10, lines 1-2; and “using a histogram of **an End of Block (EOB) lengths for a number of B-frames**” as claimed in claim 11, line 6.

The Examiner has thoroughly reviewed the disclosure, and has determined that the Specification lacks support for the above identified claimed features. For example, the Specification, at pages 2-3, teaches different aspects of the present invention for reducing iDCT execution time by examining coefficients of a DCT block to determine the position of the EOB coefficient, and selecting an iDCT algorithm based upon the position of the EOB coefficient.

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The Specification, at page 14 further elaborates on the details of the particular use of an EOB marker value for indicating that all further coefficients in the block have a value of zero (page 14, lines 10-11), and an EOB value in coefficient one indicates that only the DC coefficient is non-zero, while an EOB value of in coefficient ten indicates that no coefficient outside the 4x4 block of lowest frequency coefficients (as shown in Table 1, see page 12) is non-zero (page 14, lines 20-23). The Specification, at page 17, lines 20+ teaches that “Based upon the input provided to switch 210, one of a plurality of iDCT algorithms from set 220 is selected. Subset 222 contains iDCT algorithms iDCT_high and iDCT_low, based upon the EOB histogram of B-frames in the sequences illustrated in Figure 3. For example, a version of iDCT_high would be selected for an EOB of 14 or 15”. The above passages within the Specification as identified by the Examiner appear to be most relevant to the claimed invention. But it is clear that there is no support for the “EOB length”, “EOB lengths”, “a histogram of EOB lengths for a number of B frames corresponding to a shot”, and “an EOB length histogram for B-frames” features as recited in combination with other claimed elements. In fact, the Specification does not even mention the terms “EOB length”, “EOB lengths”, “histogram of EOB lengths”, and “EOB length histogram”.

5. Claims 7, 9, and 10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

For examples:

- (1) claim 7, line 1, “said iDCT_high algorithm” shows no clear antecedent basis;
- (2) claim 9, line 1, “medium” should be changed to “computer program” in order to provide proper antecedent basis for the same as specified at claim 6, line 1;

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(3) claim 9, line 1, "said iDCT_high algorithm" shows no clear antecedent basis;

(4) claim 10, line 1, "medium" should be changed to "computer program" in order to provide proper antecedent basis for the same as specified at claim 6, line 1; and

(5) claim 10, line 1, "said iDCT_low algorithm" shows no clear antecedent basis.

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

7. Claims 1 and 4 are rejected under 35 U.S.C. 102(a) as being anticipated by Murata et al of record (Fast 2D IDCT Implementation with Multimedia Instructions for a Software MPEG2 Decoder).

Due to the indefiniteness of the claims as pointed out in the above paragraph (4), the Examiner wants to point out that the claims are being read in the broadest sense. The EOB length(s) as claimed are interpreted as simply an EOB value(s). The EOB length histogram as claimed is interpreted as simply an EOB histogram value.

Murata et al discloses an MPEG2 decoder system as shown in Figure 5, and the same method for selecting inverse discrete cosine transform algorithms and system for reducing iDCT execution time as claimed in claims 1 and 4, comprising the same examining the coefficients of a DCT block to determine an EOB length and determination means for determining an EOB length in a DCT block (i.e., EOB code value/EOB address, see page 3106 section 2.3, page 3107, section 3.1); and selection means for selecting an iDCT algorithm from a plurality of iDCT

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algorithms based upon the EOB length, and execution means for executing the selected iDCT algorithm (see Figure 5, page 3107, section 3.1).

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 2, 3, 5-7, 9, 11, 12, 20, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murata et al as applied to claims 1 and 4 in the above paragraph (7), and further in view of Singh et al of record (US 2002/0027954 A1).

Murata et al discloses substantially the same method for selecting inverse discrete cosine transform algorithms and system for reducing iDCT execution time as above, further including substantially the same computer program encoded on a computer readable medium containing instructions for selecting and executing iDCT algorithms, examining the coefficients of a DCT block to determine an EOB length based upon the position of the EOB coefficient (i.e., EOB code value/EOB address, see page 3106 section 2.3, page 3107, section 3.1); wherein the iDCT high algorithm is based upon an EOB length of 39 or 40 (i.e., the iDCT normal algorithm is considered an iDCT high algorithm, since the iDCT normal algorithm is selected if the EOB is greater than 10, and therefore an EOB length of 39 or 40 is included in such iDCT high algorithm selection, see Figure 5, page 3106, section 2.3, page 3107, section 3.1); a plurality of iDCT algorithms comprising an iDCT high algorithm and an iDCT low algorithm (i.e., the iDCT 4 x 4 algorithm is considered an iDCT low algorithm and the iDCT normal algorithm is

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considered an iDCT high algorithm since the iDCT 4 x 4 will be selected if the EOB is less than 10 while the iDCT normal will be selected if the EOB is greater than 10, see Figures 4 and 5, page 3106, section 2.3, page 3107, section 3.1); a switch for selecting a selected algorithm from the plurality of iDCT algorithms, wherein the switch accepts as input a block of DCT coefficients, an EOB address, and a picture type bit rate (see Figure 5); and wherein the plurality of iDCT algorithms includes one of iDCT Normal, iDCT AC, iDCT high, iDCT low and iDCT DC (see page 3106), as claimed in claims 6, 7, 9, 11, 12, and 20.

Murata et al does not particularly disclose, though, generating a histogram of EOB lengths for a number of B frames corresponding to a shot, wherein the iDCT algorithm is an iDCT low algorithm selected using an EOB histogram of the first B-frame of a shot, wherein the iDCT algorithm is selected by creating an EOB length histogram of the first B-frame of a shot, selecting an iDCT algorithm using an EOB length histogram for B-frames, selecting a selected algorithm using a histogram of EOB lengths for a number of B-frames, and wherein the iDCT algorithm is an iDCT high algorithm available to the method and selected using an EOB histogram of the first B-frame of the shot as claimed in claims 2, 3, 5, 6, 11, and 21. However, Singh et al discloses a method and device for gathering block statistics during inverse quantization and iscan as shown in Figures 1-3, and teaches the conventional use of histograms for the determination and selection of the most optimal IDCT algorithm of MPEG blocks of decoded data, which includes B-frames (see sections [0007] and [0011]). Therefore, it would have been obvious to one of ordinary skill in the art, having the Murata et al and Singh et al references in front of him/her and the general knowledge of IDCT decoding processings within video decoders, would have had no difficulty in using the determination and selection of an

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optimal IDCT algorithm based on histogram length data for B-frames as taught by Singh et al to provide the particular selection of iDCT algorithms using EOB length histograms for B frames within Murata as part of another selection criteria of the various IDCT algorithms for the same well known improving of the IDCT computational efficiency purposes as claimed.

10. Claims 8, 10, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murata et al and Singh et al as applied to claims 1-7, 9, 11, 12, 20, and 21 in the above paragraphs (7) and (9), and further in view of Youn et al of record (6,650,707).

The combination of Murata et al and Singh et al discloses substantially the same method for selecting inverse discrete cosine transform algorithms, system for reducing iDCT execution time, and computer program encoded on a computer readable medium containing instructions for selecting and executing iDCT algorithms as above, but does not particularly disclose the followings:

(a) the plurality of iDCT algorithms comprising the iDCT Normal as claimed in claim 13; and

(b) wherein the iDCT low algorithm is based upon an EOB length of 14 or 25 as claimed in claims 8 and 10.

Regarding (a), the particular use of a specified or any number of plural iDCT algorithms for selection purposes, is however old and well recognized in the art. Youn et al, for example, discloses in Figure 5, five different IDCT algorithms with specific criteria in determining and selecting of one of the five IDCT algorithms. Either iDCT algorithms as shown in block 512 or 516 of Figure 5 of Youn et al may hence be used as the iDCT Normal algorithm as claimed. Therefore, it would have been obvious to one of ordinary skill in the art, having the Murata et al,

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Singh et al, and Youn et al references in front of him/her and the general knowledge of the selection of iDCT algorithms from a plural set, would have had no difficulty in providing the iDCT Normal algorithm as shown in either blocks 512 or 516 of Youn et al in order to be included within the plural iDCT algorithms of Murata et al for the same well known refined selection of iDCT algorithms for computational efficiency purposes as claimed.

Regarding (b), in view of the plural breakdown of iDCT algorithms as shown in Figure 5 of Youn et al, it is hence considered obvious to modify the iDCT algorithm when $EOB > 10$ (520 of Figure 5) to include any desired amount of separate iDCT algorithms, such as the iDCT low algorithms as claimed. Therefore, it would have been obvious to one of ordinary skill in the art, having the Murata et al, Singh et al, and Youn et al references in front of him/her and the general knowledge of the selection of iDCT algorithms based on the EOB of coefficients, would have had no difficulty in providing the iDCT low algorithm being based upon an EOB length of 14 or 25 within the normal iDCT processing of Murata et al in view of the plural breakdown of iDCT algorithms within Youn et al for the same well known iDCT computational efficiency based upon the use of multiple breakdown of EOB lengths purposes as claimed.

11. Claims 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murata et al of record and Singh et al as applied to claims 1-7, 9, 11, 12, 20, and 21 in the above paragraphs (7) and (9), and further in view of Jun et al of record (US 2001/60021268 A1).

The combination of Murata et al and Singh et al discloses substantially the same method for selecting inverse discrete cosine transform algorithms, system for reducing iDCT execution time, and computer program encoded on a computer readable medium containing instructions for selecting and executing iDCT algorithms as above, but does not particularly disclose wherein the

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shot includes a sequence of frames bounded on each side by a video transition, the video transition includes one of a cut frame, a dissolve, or a cross-dissolve as claimed in claims 18 and 19. However, Jun et al discloses a hierarchical hybrid shot change detection method for MPEG compressed video as shown in Figures 2 and 6, and teaches the conventional video transitions involving shots that include editing effects such as a fades and dissolves within MPEG video data which includes B-frames of video (see sections [0010], [0012], [0015], [0041], [0047], [0048], [0050]). Therefore, it would have been obvious to one of ordinary skill in the art, having the Murata et al, Singh et al, and Jun et al references in front of him/her and the general knowledge of shot changes within MPEG video processings, would have had no difficulty in providing the video transition effects such as dissolves as taught by Jun et al within the video decodings of Murata et al for the same well known editing of videos purposes as claimed.

12. Due to the above new grounds of rejections, the Examiner wants to point out that only pertinent arguments from the amendment filed December 20, 2005 will now be addressed.

Regarding the applicant's arguments at page 6 of the amendment filed December 20, 2005 concerning in general that "Singh classifies the input data blocks into a small number of classes based on the location and frequency of sub-blocks (within the input data block) having non-zero valued DCT coefficients where each data block falls into one of the classes ... Singh characterizes each input data block based upon a predetermined pattern of sub-blocks having non-zero valued DCT coefficients. Based upon this characterization, an appropriate iDCT algorithm is selected for that particular data block based on the pattern of sub-blocks.

Furthermore, since each DCT data block must be characterized in order to assign the appropriate iDCT algorithm, Singh requires a substantial commitment of computational resources ...", the

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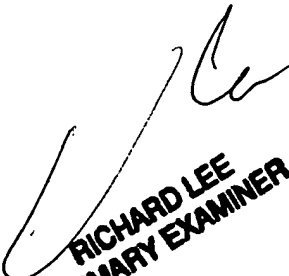
Examiner wants to point out that though Singh may classify the input data blocks, select an iDCT algorithm that best exploits the pattern of non-zero sub-blocks of that class, and various other features different from the present invention, the critical issue at hand is that Singh nevertheless teaches the use of histograms for the determination and selection of the most optimal IDCT algorithm of MPEG blocks of decoded data, which includes B-frames (see sections [0007], [0011] of Singh). And it is considered obvious to using such selection of optimal IDCT algorithm as taught by Singh to be included within Murata, thereby rendering obvious the claimed invention.

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard Lee whose telephone number is (571) 272-7333. The Examiner can normally be reached on Monday to Friday from 8:00 a.m. to 5:30 p.m, with alternate Fridays off.


RICHARD LEE
PRIMARY EXAMINER

Richard Lee/rl

2/24/06

